the capabilities offered by the device, whereas to achieve similar functionality in level 1, this DCM would have to be embedded somewhere in the network. For example, when a new device is added to a network, level 1 requires that at least one other device comprises an embedded DCM compatible with the new device. In comparison, level 2 only requires that one device provide a runtime environment for the uploaded DCM obtained from the new device.

The concept of uploading and executing bytecode also provides the possibility for device-specific applications called Device Control Applications. Through these applications a device manufacturer can provide the user a way to control special features of a device without the need for standardizing all the features in HAVi. The application is provided by a DCM in HAVi bytecode and can be uploaded and installed by each FAV device on the network.

For further information, reference is made to the HAVi specification and the IEEE 1394 specification that are available in the public domain. The HAVi core specification has been made available on the web at, for example, http://www.sv.philips.com/news/press, and is incorporated herein by reference.

Now, within the HAVi-context, routes can be installed through registering for setting up messaging traffic upon state changes in a the devcies making up a HAVi-compliant system. Again, by labeling the messages using identifiers, routes of different scenarios are kept independent in a similar manner as edscribed in the obkject-oriented approach discussed with reference to Figs. 1 and 2. Within these different contexts, the terms calls and messages, objects and HAVi-software representations are to be interpreted as equivalent for the purpose of this invention.

The following U.S. patent applications are incorporated herein by reference:

Checked 12/4/04 U.S. Serial No. 08/731,624 (Attorney docket No. PHA 23,169) of same Assignee, filed 10/15/96 for Paul Chambers and Saurabh Srivastava for "TASK-DRIVEN DISTRIBUTED MULTIMEDIA CONSUMER SYSTEM". This document relates to a control system comprises multiple consumer electronics devices and task-driven control means coupled to the devices for controlling an interaction among the devices. The control means acts on respective software representations of each respective one of the consumer devices. By encapsulating the variable complexity of the task within a software representation, it can be made as simple or as sophisticated as needed to bring the capabilities up to a common level. Since the level of interface is common to the devices, applications can uniformly manipulate devices which embody very different levels of sophistication.

Checked 12/4/04 U.S. Serial No. 09/146,020 (Attorney Docket No. PHA 23,492) of same Assignee filed 09/02/98 for S:\vk\SB02VKB0.VKR